Binational Expansion of the Harmful Algal Blooms Observing System

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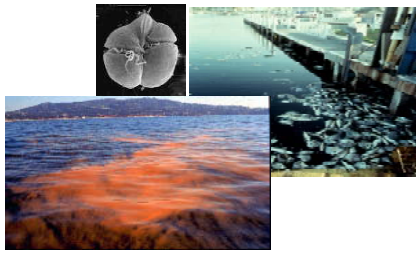
Issue:

Harmful Algal Blooms (HABs) are "blooms" of large numbers of microscopic algae (phytoplankton) that occur in aquatic environments, and especially in nearshore coastal waters and estuaries, and harm humans or the environment. One type of HAB that is very common in the Gulf of Mexico is "red tide", which is caused by the phytoplankton organism, *Karenia brevis* (a dinoflagellate). *K. brevis* can cause massive fish kills, marine mammal mortality, and in humans, neurotoxic shellfish poisoning (NSP) and respiratory irritation. The Gulf of Mexico has experienced intense blooms of *K. brevis* in 22 of the last 23 years.

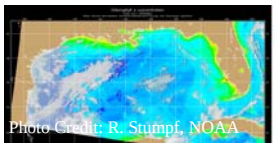


Objective:

To integrate HAB bulletin technology and HABSOS interpretation and dissemination of HAB-related information in a binational, web-based data management and communication system

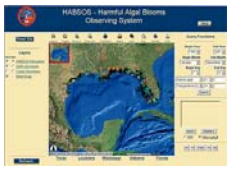
Project Activities:

Satellite Imagery



Ocean color detects bloom location and intensity and validated by regular and opportunity sampling programs

HABSOS Website

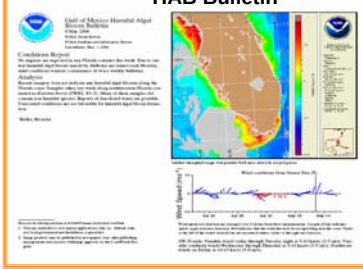


HABSOS website will present U.S. and Mexican data in English and Spanish

Meteorological Monitoring

C-MAN stations deployed along Veracruz coastal areas to transmit real-time wind speed and direction

HAB Bulletin



In-Situ HAB Detection

Red Tide organisms detected in the water column by visual (microscopic) identification and in situ colorimetric sensing

Outcomes:

1. Provides a forecasting system for *K. brevis* in the Gulf of Mexico as directed within the President's Ocean Action Plan.
2. Produces daily information and twice weekly forecasts of the current and future location and intensity of blooms.
3. Expansion of the HABSOS program into Mexico's EEZ is a significant bilateral cooperative activity to manage marine resources in the Gulf of Mexico.

Partners:

NOAA/NOS, NOAA/NCDDC, NOAA/NDBC, NRL/SSC, NASA, Gulf of Mexico States Accord, Papaloapan River Basin Development Council, Veracruz, MX, Veracruz institute of Ecology, Veracruz Aquarium, and the U.S. Gulf of Mexico States.

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